



# ***STIC Search Report***

## ***EIC 2100***

**STIC Database Tracking Number: 210710**

**TO: Thanh-ha Dang**  
**Location: RND 3B15**  
**Art Unit: 2163**  
**Monday, December 18, 2006**

**Case Serial Number: 10/723750**

**From: Byron T. Mims**  
**Location: EIC 2100**  
**RND-4B19**  
**Phone: 272-3528**

**byron.mims@uspto.gov**

### **Search Notes**

Thanh-ha

Enclosed are art findings that may be of interest. I have tagged as well as highlighted the enclosed retrieved items, which seemed most relevant. Let me know if there is anything in particular that you would like for me to pursue further.

Byron

Set	Items	Description
S1	3487335	FEDERAT? OR CONSOLIDAT? OR AGGREGAT? OR COMBIN? OR JOIN??? OR GROUP??? OR ASSOCIAT?
S2	3274164	MIGRAT??? OR MAP OR MAPS OR MAPP??? ? OR MOVING? OR TRANSF- ER? OR TRANSLAT? OR MOVE??? ?
S3	2795	(LOCAL OR INDEPEND? OR STAND()ALONE OR INDIVIDUAL? OR SING- L? OR SEPARATE? OR SINGULAR? OR UNIQUE? OR LONE?) (3W) ((FILE OR DATA OR INFORMATION??) (2W) (SYSTEM? ? OR COMPUT? OR CLIENT? OR DATABASE?))
S4	16280	(NETWORK? OR INTERNET? OR INTRANET? OR DISTRIBUT? OR ETHER- NET? OR EXTRANET? OR SUBNET? OR LAN? ? OR WAN? ? OR WLAN) (3W) - ((FILE OR DATA OR INFORMATION??) (2W) (SYSTEM? ? OR COMPUT? OR - CLIENT? OR DATABASE?))
S5	869447	(ENABL? OR ALLOW??? OR PERMIT? OR FACILITAT? OR AUTHORI? OR PROVID? OR GIVE? ? OR GIVING OR GRANT?) (3N) (ACCESS? OR ENTRY OR ENTRIE? ? OR USE? ? OR USING OR UTILI? OR ENTREE? OR EDIT?- ?? OR READWRITE? OR READ()WRITE)
S6	27778	S5 (5N) (WHILE OR STILL OR DURING OR DESPITE OR CONCURRENT? - OR LIVE OR LIVETIME? ? OR RUN? ? OR RUNNING OR WHILE()RUNNING OR REALTIME OR REAL()TIME?)
S7	1	S1 AND S2 AND S3 AND S4 AND S6
S8	13	S1 AND S2 AND S3 AND S4 AND S5
S9	12	S8 NOT S7
S10	28	S1 AND S2 AND S4 AND S6
S11	13	S7:S9
S12	27	S10 NOT S11
S13	26	S12 NOT (PR>2003 OR PR=2004:2006)
S14	0	S13 AND FILE(3N)MIGRATION?
S15	0	S13 AND FEDERATION

File 350:Derwent WPIX 1963-2006/UD=200680

(c) 2006 The Thomson Corporation

File 347:JAPIO Dec 1976-2006/Aug(Updated 061130)

(c) 2006 JPO & JAPIO

7/69,K/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0014009346 - Drawing available  
WPI ACC NO: 2004-190737/  
XRPX Acc No: N2004-151388

Distributed file system for accessing files in a network, is provided in global file space to access local file systems established in several clustered nodes of network

Patent Assignee: ARUMUGAM A (ARUM-I); GOPALAKRISHNAN S (GOPA-I); IFTODE L (IFTOD-I); SIDIE R (SIDI-I)

Inventor: ARUMUGAM A; GOPALAKRISHNAN S; IFTODE L; SIDIE R

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20040030731	A1	20040212	US 2002369313	P	20020403	200418 B
			US 2002369587	P	20020404	
			US 2003406533	A	20030403	

Priority Applications (no., kind, date): US 2002369587 P 20020404; US 2002369313 P 20020403; US 2003406533 A 20030403

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20040030731	A1	EN	11	5	Related to Provisional US 2002369313 Related to Provisional US 2002369587

#### Alerting Abstract US A1

NOVELTY - The distributed file system is provided in a global file space to access local file systems established in several clustered nodes of a network. File pathnames in the global file space are independent of a location of a file designated by the pathname on ones of the clustered nodes. No change is required in a local file system for participation in the global file space file access process.

DESCRIPTION - An INDEPENDENT CLAIM is included for the file access system for providing access from a global file space to local files distributed across a cluster of cluster nodes.

USE - For identifying and accessing files stored on several distributed nodes of a network.

ADVANTAGE - Provides distributed application with access to files of multiple local file systems across a cluster through a location-dependent file naming, and implements load balancing, migration and replication for increased availability and performance. Uses low-overhead, user-level communication mechanism called remote memory communication (RMC) to achieve high performance. Provides a new file system, called Federated File System (FedFS) that provides a global file space for distributed application. Ensures flexibility by allowing the application to define its own file clustering territory at the run time. Provides easy to use global file naming by merging the local file systems into a single global directory tree. Provides leverage of local file system performance optimizations. Ensures faster development by using local file systems.

DESCRIPTION OF DRAWINGS - The figure shows the virtual directories and directory tables created in the distributed file system.

Title Terms/Index Terms/Additional Words: DISTRIBUTE; FILE; SYSTEM; ACCESS; NETWORK; GLOBE; SPACE; LOCAL; ESTABLISH; CLUSTER; NODE

Class Codes

International Classification (Main): G06F-017/30

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-N02B1A; T01-S02

Distributed file system for accessing files in a network, is provided in global file space to access local file systems established in several clustered nodes of network

**Alerting Abstract ...NOVELTY** - The distributed file system is provided in a global file space to access local file systems established in several clustered nodes of a network. File pathnames in the global file space...

...by the pathname on ones of the clustered nodes. No change is required in a local file system for participation in the global file space file access process....**ADVANTAGE** - Provides distributed application with access to files of multiple local file systems across a cluster through a location-dependent file naming, and implements load balancing, migration and replication for increased availability and performance. Uses low-overhead, user-level communication mechanism called remote memory communication (RMC) to achieve high performance. Provides a new file system, called **Federated File System (FedFS)** that provides a global file space for distributed application. Ensures flexibility by allowing the application to define its own file clustering territory at the run time. Provides easy to use global file naming by merging the local file systems into a single global directory tree. Provides leverage of local file system performance optimizations. Ensures faster development by using local file systems .

...**DESCRIPTION OF DRAWINGS** - The figure shows the virtual directories and directory tables created in the distributed file system .

#### Original Publication Data by Authority

#### Original Abstracts:

A distributed file system architecture, characterized as a **Federated File System (FedFS)**, is provided as a loose clustering of local file systems existing in a plurality of cluster nodes. The distributed file system architecture is established as an ad-hoc global file space to be used by a...

...node cluster is provided in a location-independent manner. FedFS also supports dynamic reconfiguration, file migration and file replication. FedFS further operates on top of, and without constraint on autonomous local file systems. >

#### Claims:

What is claimed is:<b>1</b>. A distributed file system provided in a global file space to access local file systems established in a plurality of clustered nodes.

\* Your Assignee & INV

9/69,K/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2006 The Thomson Corporation. All rts. reserv.

0015055574 - Drawing available

WPI ACC NO: 2005-403598/200541

XRPX Acc No: N2005-327353

Federation method of local file system into distributed file system in computer system, involves adding federation layer for establishing detour between local applications and local file system, to provide access to distributed mechanism

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: BECKER-SZENDY R A; SIVAN-ZIMET M

Patent Family (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 20050114291	A1	20050526	US 2003723750	A	20031125	200541 B

Priority Applications (no., kind, date): US 2003723750 A 20031125

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20050114291	A1	EN	21	8	

#### Alerting Abstract US A1

NOVELTY - The method involves adding a federation layer for establishing a detour between the local applications and local file system, to provide access to a distributed mechanism.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- 1.computer program product having instructions codes for federating local file system into distributed file system ; and
- 2.service for federating local file system into distributed file system .

USE - For federating local file system into distributed file system in computer system.

ADVANTAGE - Enables to federate and optionally migrate the data on a computer system with minimum disruption to applications operating on computer system. Minimal downtime is required to install the federation system that can be used with any file system protocol that supports migration , consistency and multi host federation .

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of operating environment.

Title Terms/Index Terms/Additional Words: METHOD; LOCAL; FILE; SYSTEM; DISTRIBUTE; COMPUTER; ADD; LAYER; ESTABLISH; DETOUR; APPLY; ACCESS; MECHANISM

#### Class Codes

International Classification (Main): G06F-007/00

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-F05E; T01-S03

Federation method of local file system into distributed file system in computer system, involves adding federation layer for establishing detour between local applications and local file system

, to provide access to distributed mechanism

**Original Titles:**

System, method, and service for federating and optionally migrating a local file system into a distributed file system while preserving local access to existing data

**Alerting Abstract ...NOVELTY** - The method involves adding a federation layer for establishing a detour between the local applications and local file system, to provide access to a distributed mechanism.... computer program product having instructions codes for federating local file system into distributed file system; and service for federating local file system into distributed file system.

...

...USE - For federating local file system into distributed file system in computer system...

...ADVANTAGE - Enables to federate and optionally migrate the data on a computer system with minimum disruption to applications operating on computer system. Minimal downtime is required to install the federation system that can be used with any file system protocol that supports migration, consistency and multi host federation.

**Original Publication Data by Authority**

**Original Abstracts:**

Indirect access to local file systems is provided using storage tank protocols, allowing federation of a local file system into a distributed file system while preserving local access to the existing data in the local file system. The goal of the present system is to federate and migrate the data on a computer system with minimum disruption to applications operating on the computer system. Existing applications on a computer system continue to operate during data federation and migration and require little or no reconfiguration either when the data migration starts or when it ends. Data consistency is maintained: existing applications may modify data in the file system during migration or federation. During federation, other computer systems (or hosts) may modify the data in the file system if access control information allows them to do so. All changes in the file system are seen consistently on all...

**Claims:**

<b>1</b>. A method of federating a local file system into a distributed file system while preserving local access to an existing data in the local file system, comprising: adding a federation layer that allows both a local client and a plurality of distributed clients to access the existing data; allowing local applications to access both the data exposed in the local file system and data in other parts of the distributed file system; and wherein the federation layer establishes a detour between the local applications and the local file system, to provide access to a distributed mechanism.

9/69,K/3 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0014471953 - Drawing available  
WPI ACC NO: 2004-663424/200465  
Related WPI Acc No: 2004-663423; 2004-692924; 2004-832640  
XRPX Acc No: N2004-525263

**Method of facilitating enterprise change for restructuring organizations, involves treating information systems of enterprises which set out to merger and acquisition, as single information system**

Patent Assignee: KOL N (KOLN-I); MOORE D B (MOOR-I); SAP AG (SAPS-N); SCHWERIN-WENZEL S (SCHW-I); WOOD E (WOOD-I)

Inventor: KOL N; MOORE D B; SCHWERIN-WENZEL S; WOOD E

Patent Family (6 patents, 34 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
EP 1457909	A2	20040915	EP 200475838	A	20040315	200465 B
US 20040181425	A1	20040916	US 2003455087	P	20030314	200465 E
			US 2003750406	A	20031231	
US 20040249658	A1	20041209	US 2003455087	P	20030314	200481 E
			US 2004768967	A	20040130	
US 20040249659	A1	20041209	US 2003455087	P	20030314	200481 E
			US 2004769472	A	20040130	
US 20040254805	A1	20041216	US 2003455087	P	20030314	200482 E
			US 2004769297	A	20040130	
US 20050015333	A1	20050120	US 2003455087	P	20030314	200507 E
			US 2004768402	A	20040130	

Priority Applications (no., kind, date): US 2003750406 A 20031231; US 2004769472 A 20040130; US 2004769297 A 20040130; US 2004768967 A 20040130; US 2003455087 P 20030314; US 2004768402 A 20040130

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
EP 1457909	A2	EN	101	68	
Regional Designated States, Original: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR					
US 20040181425	A1	EN			Related to Provisional US 2003455087
US 20040249658	A1	EN			Related to Provisional US 2003455087
US 20040249659	A1	EN			Related to Provisional US 2003455087
US 20040254805	A1	EN			Related to Provisional US 2003455087
US 20050015333	A1	EN			Related to Provisional US 2003455087

#### Alerting Abstract EP A2

NOVELTY - The information systems of the enterprises which set out to a merger and an acquisition are treated as a **single information system** and a **user interface is provided to access the logical information system.**

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- 1.system for facilitating enterprise change; and
- 2.recorded medium storing program for enterprise change.

USE - For **facilitating enterprise change for organizational restructuring.**

ADVANTAGE - Effectively facilitates the process of organizational restructuring.

DESCRIPTION OF DRAWINGS - The figure shows a flow diagram of the process

for facilitating enterprise change.

**Title Terms/Index Terms/Additional Words:** METHOD; FACILITATE; CHANGE; RESTRUCTURING; TREAT; INFORMATION; SYSTEM; SET; MERGE; ACQUIRE; SINGLE

**Class Codes**

International Classification (Main): G06F-017/60

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-J05A2A; T01-N01A2E; T01-S03

...organizations, involves treating information systems of enterprises which set out to merger and acquisition, as single information system

**Alerting Abstract** ...the enterprises which set out to a merger and an acquisition are treated as a single information system and a user interface is provided to access the logical information system.... **USE**  
- For facilitating enterprise change for organizational restructuring

**Original Publication Data by Authority**

**Original Abstracts:**

...one or more information systems of at least two enterprises, wherein the enterprises are being combined to execute pre-change due diligence and/or post-change integration of the enterprise change...

...of a merger and an acquisition; treating said two or more information systems as a single logical information system; and providing a user interface to access the logical information system. In a preferred embodiment, the method may comprise...

...one or more organizations. In one general implementation, the technique includes the generation of a single logical information system across one or more information systems of at least two enterprises, wherein the enterprises are combined, and the single logical information system is used to execute restructuring activities. The logical information system facilitates restructuring-related issue management...

...restructuring of at least two organizations includes presenting a user interface including information relating to consolidating customer accounts for at least one of the restructuring organizations, and presenting a template in...

...and acquisition processes and tools for one or more organizations. A method includes providing a single logical physically distributed information system across one or more information systems of at least two enterprises, wherein the enterprises are being combined, and providing a user interface to access the single logical physically distributed information system to execute one or more pre-merger activities, merger activities, and post-merger activities, wherein...

...the human-resource tools including a compensation cost assessment tool, a compensation comparison and level mapping tool, and a self-servicing tool for employees and managers, the human-resource tools including...

...and acquisition processes and tools for one or more organizations. A method includes providing a single logical physically distributed information system across one or more information systems of at least two enterprises, wherein the enterprises are being combined, and providing a user interface to access the single logical physically



**distributed information system** to execute one or more merger activities of the enterprises, the merger activities comprising a...

**Claims:**

...one or more information systems of at least two enterprises, wherein the enterprises are being **combined** to execute pre-change due diligence and/or post-change integration of the enterprise change, the enterprise change comprising at least one of a merger and an acquisition; **combining** said two or more information systems so as to treat said two or more information systems as a **single logical information system**; and providing a user interface to access the logical information system...

...What is claimed is: **1**. A method comprising: providing a single logical **physically distributed information** system across one or more information systems of at least two enterprises, the enterprises are **being combined**; and providing a user interface to **access** the single logical **physically distributed** information system to manage one or more restructuring-related issues, the user interface is adapted to manage one or more deliverables associated with a restructuring...

...restructuring of at least two organizations, the method comprising: presenting a user interface including information **relating** to consolidating customer accounts for at least one of the restructuring organizations; and presenting a...

...is: **1**. A method of facilitating an enterprise change comprising: treating two or more information **systems** as a **single** logical information system to execute pre-change due diligence and post-change integration of the...

...What is claimed is: **1**. A **method** comprising: providing a **single** logical physically distributed information system across one or more information systems of at least two enterprises, wherein the enterprises are being restructured; and providing a **user** interface to **access** the **single** logical **physically distributed** information **system**, the **single** logical physically distributed information system executing one or more restructuring activities, pre-restructuring activities, and...

...What is claimed is: **1**. A method comprising: **providing** a **single** logical physically distributed information system across one or more information systems of at least two enterprises, **wherein** the enterprises are being combined; and providing a user interface to **access** the single logical physically distributed information system to execute one or more merger activities of the...

9/69,K/4 (Item 4 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0013974027 - Drawing available  
WPI ACC NO: 2004-154874/200415  
XRPX Acc No: N2004-123803

**Load balancing method for network data processing system , involves moving threads from run queue with more threads to run queue with less threads, if system is imbalanced**

Patent Assignee: IBM CORP (IBMC); INT BUSINESS MACHINES CORP (IBMC)  
Inventor: BRENNER L B; BURDICK D J

**Patent Family** (5 patents, 4 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20030236815	A1	20031225	US 2002177410	A	20020620	200415 B
JP 2004030663	A	20040129	JP 2003174083	A	20030618	200415 E
CN 1469246	A	20040121	CN 2003145156	A	20030616	200425 E
TW 200411566	A	20040701	TW 2003116391	A	20030617	200580 E
US 7080379	B2	20060718	US 2002177410	A	20020620	200648 E

*Your Assignee*

Priority Applications (no., kind, date): US 2002177410 A 20020620

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030236815	A1	EN	15	7	
JP 2004030663	A	JA	17		
TW 200411566	A	ZH			

#### Alerting Abstract US A1

NOVELTY - Each created thread is assigned a priority, placed in a run queue and categorized into a band. A system load is imbalanced if same bands in different queue have different number of threads. The threads are moved from the run queue with more threads to run queue with less threads, if the system is imbalanced.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- 1.computer program product for load balancing;
- 2.apparatus for load balancing; and
- 3.multiprocessor system.

USE - For balancing load in symmetric multiprocessor and single processor server data processing system e.g. international business machine (IBM) e-sever p-series system and stand alone client data processing system e.g. personal computer, network computer, personal digital assistant, notebook computer, handheld computer, kiosk or web appliance connected through internet, intranet, local area network and wide area network using wire or wireless communication links and fiber optic cables in network data processing system in university.

ADVANTAGE - The balancing is dynamic. Threads are added, removed and changed to another band simultaneously and it is ensured that user-policies are adhered.

DESCRIPTION OF DRAWINGS - The figure shows the flow diagram of the software program for load balancing.

**Title Terms/Index Terms/Additional Words:** LOAD; BALANCE; METHOD; NETWORK; DATA; PROCESS; SYSTEM; MOVE ; THREAD; RUN; QUEUE; MORE; LESS; IMBALANCE

### Class Codes

International Classification (Main): G06F-009/46, G06F-009/50

(Additional/Secondary): G06F-013/26

International Classification (+ Attributes)

IPC + Level Value Position Status Version

G06F-0013/14	A	I		R	20060101
G06F-0015/16	A	I		R	20060101
G06F-0009/00	A	I		R	20060101
G06F-0009/46	A	I		R	20060101
G06F-0009/46	A	I	F	B	20060101
G06F-0009/50	A	I		R	20060101
G06F-0013/14	C	I		R	20060101
G06F-0015/16	C	I		R	20060101
G06F-0009/00	C	I		R	20060101
G06F-0009/46	C	I		R	20060101

File Segment: EPI;

DWPI Class: T01; W01

Manual Codes (EPI/S-X): T01-F02C; T01-N02A3B; T01-S03; W01-A06E1

**Load balancing method for network data processing system , involves moving threads from run queue with more threads to run queue with less threads, if system...**

**Alerting Abstract** ...imbalanced if same bands in different queue have different number of threads. The threads are **moved** from the run queue with more threads to run queue with less threads, if the...

...USE - For balancing load in symmetric multiprocessor and **single** processor server **data processing system** e.g. international business machine (IBM) e-sever p-series system and **stand alone client data processing system** e.g. personal computer, network computer, personal digital assistant, notebook computer, handheld computer, kiosk or...

...and wide area network using wire or wireless communication links and fiber optic cables in **network data processing system** in university...

**Title Terms.../Index Terms/Additional Words:** MOVE ;

**Original Publication Data by Authority**

### Original Abstracts:

...method, system and apparatus for integrating a system task scheduler with a workload manager are **provided** . The scheduler is **used** to assign default priorities to threads and to place the threads into run queues and ...

...the run queues. To do so, the threads are organized in classes. Each class is **associated** with a priority as per a use-policy. This priority is used to modify the...

...system is deemed to be load-imbalanced. If not, the system is load-balanced by **moving** one thread in the band from the run queue with the greater number of threads...

...method, system and apparatus for integrating a system task scheduler with a workload manager are **provided** . The scheduler is **used** to assign default priorities to threads and to place the threads into run queues and ...

...the run queues. To do so, the threads are organized in classes. Each class is **associated** with a priority as per a use-policy. This priority is used to modify the...

...system is deemed to be load-imbalanced. If not, the system is load-balanced by **moving** one thread in the band from the run queue with the greater number of threads...

**Claims:**

...of another run queue; andload-balancing the system, if the system is load-imbalanced, **by** moving threads from the run queue with the higher number of threads in the band...

...the second processor run queue; andload-balancing the system, if the system is load- **imbalanced** , by moving threads from the one priority band of the first processor run queue to...

9/69,K/7 (Item 7 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0013565743 - Drawing available  
WPI ACC NO: 2003-660005/200362  
Related WPI Acc No: 2006-443054  
XRPX Acc No: N2003-526295

Network file system virtualizing method for e-business application,  
involves providing software virtualization layer that enables client to  
access data files without knowing corresponding file servers and pathnames

Patent Assignee: BOBBITT J E (BOBB-I); DOLL S A (DOLL-I); EMC CORP  
(EMCE-N); FRIEDMAN M T (FRIE-I); LAU P W S (LAUP-I); MULLALLY J P  
(MULL-I)

Inventor: BOBBITT J E; DOLL S A; FRIEDMAN M T; LAU P W S; MULLALLY J P

Patent Family (2 patents, 1 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
US 20030115218	A1	20030619	US 200125005	A	20011219	200362 B
US 7024427	B2	20060404	US 200125005	A	20011219	200624 E

Priority Applications (no., kind, date): US 200125005 A 20011219

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20030115218	A1	EN	29	13	

#### Alerting Abstract US A1

NOVELTY - The storage spaces of file systems are aggregated into single virtual storage space. A software virtualization layer including both client and server software components is provided for enabling client to access data files stored in the storage space without knowing corresponding file servers and pathnames.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- 1.virtual file system creation method;
- 2.virtual file system provision method; and
- 3.virtual file system.

USE - For virtualizing network file system such as \*\*UNIX \*\* and Linux file system, Gossamer file system used by clients to locate files and directories on multiple server computers connected by storage area network (SAN), local area network (LAN), wide area network (WAN), intranet for e-business applications.

ADVANTAGE - The load balance is achieved by distributing files across various file servers in the system. Improves efficiency of accessing data files by enabling clients to access data files without knowing corresponding file servers and pathnames.

DESCRIPTION OF DRAWINGS - The figure shows a schematic view illustrating primary software components of virtual file system.

Title Terms/Index Terms/Additional Words: NETWORK; FILE; SYSTEM; METHOD;  
BUSINESS; APPLY; SOFTWARE; LAYER; ENABLE; CLIENT; ACCESS; DATA;  
CORRESPOND; SERVE

#### Class Codes

International Classification (+ Attributes)  
IPC + Level Value Position Status Version

G06F-0017/30 A I F B 20060101  
G06F-0012/00 A I R 20060101  
G06F-0012/00 C I R 20060101

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-J05B2B; T01-N01A; T01-N02B1A

Network file system virtualizing method for e-business application, involves providing software virtualization layer that enables client to access data files without knowing corresponding file servers and pathnames

**Alerting Abstract** ...NOVELTY - The storage spaces of file systems are aggregated into single virtual storage space. A software virtualization layer including both client and server software components is provided for enabling client to access data files stored in the storage space without knowing corresponding file servers and pathnames....USE - For virtualizing network file system such as <b>UNIX </b> and Linux file system, Gossamer file system used by clients to...

...balance is achieved by distributing files across various file servers in the system. Improves efficiency of accessing data files by enabling clients to access data files without knowing corresponding file servers and pathnames...

#### Original Publication Data by Authority

#### Original Abstracts:

...file servers to be "virtualized" into one or more "virtual volumes" that appear as a local file system to clients that access the virtual volumes. The system also enables the storage spaces of the underlying file systems to be aggregated into a single virtual storage space, which can be dynamically scaled by adding or removing...

...balancing file accesses by distributing files across the various file servers in the system, through migration of data files between servers...

...file servers to be "virtualized" into one or more "virtual volumes" that appear as a local file system to clients that access the virtual volumes. The system also enables the storage spaces of the underlying file systems to be aggregated into a single virtual storage space, which can be dynamically scaled by adding or removing...

...balancing file accesses by distributing files across the various file servers in the system, through migration of data files between servers.

#### Claims:

...includes a storage space in which a plurality of data files may be stored comprising: aggregating the storage spaces of said plurality of file systems into a single virtual storage space that is exported as a virtual volume that appears to clients as local file system ;creating a virtual volume directory and file name hierarchy including a virtual pathname for each...

...a software virtualization layer including both client-side and server-side software components that cooperatively enable clients to access data files stored in the virtual volume through reference to the virtual pathnames for those...

...includes a storage space in which a plurality of data files may be stored comprising: aggregating the storage spaces of said plurality of

file systems into a single virtual storage space that is exported as a virtual volume that appears to clients as **local file system**; creating a virtual volume directory and file name hierarchy including a virtual pathname for each...

...a software virtualization layer including both client-side and server-side software components that cooperatively **enable** clients to **access** data files stored in the virtual volume through reference to the virtual pathnames for those...

...files are actually stored; for each file in the virtual name directory and file hierarchy, **data** separate from **the file system** data of the underlying file system **is** associated with the virtual directory and file name hierarchy, the data including a metadata and...

9/69,K/9 (Item 9 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0012427300 - Drawing available  
WPI ACC NO: 2002-372231/200240  
XRPX Acc No: N2002-290882

**Computer network system for supporting a user in managing streaming media assets, includes server systems having distributed file systems providing services for loading, staging, distributing and delivering streamed media assets**

Patent Assignee: BOYLE D C (BOYL-I); KNOX C R (KNOX-I); LEVINE R (LEVI-I); LEVY C W (LEVY-I); NAVISITE CORP (NAVI-N); SHERRY J S (SHER-I); SNYDER T S (SNYD-I)

Inventor: BOYLE D C; KNOX C R; LEVINE R; LEVY C W; SHERRY J S; SNYDER T S  
Patent Family (5 patents, 24 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
WO 2002029519	A2	20020411	WO 2001US31127	A	20011004	200240 B
US 20020083124	A1	20020627	US 2000237796	P	20001004	200245 E
			US 2000251826	P	20001207	
			US 2001853444	A	20010511	
AU 200196601	A	20020415	AU 200196601	A	20011004	200254 E
US 20030158928	A1	20030821	US 2000237796	P	20001004	200356 E
			US 2000251826	P	20001207	
			US 2001853444	A	20010511	
			US 2002293946	A	20021113	
AU 2001296601	A8	20050915	AU 2001296601	A	20011004	200569 E

Priority Applications (no., kind, date): WO 2001US31127 A 20011004; US 2000251826 P 20001207; US 2000237796 P 20001004; US 2001853444 A 20010511

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
WO 2002029519	A2	EN	34	10	
National Designated States,Original: AU CA JP KR					
Regional Designated States,Original: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR					
US 20020083124	A1	EN			Related to Provisional US 2000237796
					Related to Provisional US 2000251826
AU 200196601	A	EN			Based on OPI patent WO 2002029519
US 20030158928	A1	EN			Related to Provisional US 2000237796
					Related to Provisional US 2000251826
					C-I-P of application US 2001853444
AU 2001296601	A8	EN			Based on OPI patent WO 2002029519

#### Alerting Abstract WO A2

NOVELTY - Network system (10) includes application server (15) supporting distributed file system (26) and web sites (17). Distributed file system provides services, e.g. upload, storage, editing and check-in, that can be accessed by clients (12) through web server (13). Services facilitate manipulation of content, and in particular, streaming media content, provided by a client for distribution over a network such as Internet.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for supporting a user in delivering a streaming media asset over a data network.

USE - For allowing a user to manage a web site that offers streaming media assets for delivery across a data network such as the Internet.



**ADVANTAGE** - The **distributed file systems** may be employed by a hosting service to provide customers with tools that facilitate management of their own site, thus providing customers with a file system that can be accessed remotely and includes a feature that replaces non-scaleable processes like FTP with processes that can **move** multiple large files in a **single** operation. The **distributed file system** also eliminates or reduces manual meta file data creation, which hinder the rapid deployment of content, and decouples the editing of meta file data from editing of the file, thus a customer can change the name of a file, the start or stop times, the **associated** codes or other meta data while that file is on the remote server, without having to edit the file on the client side and upload the edited file to the server.

**DESCRIPTION OF DRAWINGS** - The figure depicts an overview of a system for delivering streamed content.

- 10 Network system
- 12 Client devices
- 13 Server
- 15 Application server
- 17 Web sites
- 26 **Distributed file system**

**Title Terms/Index Terms/Additional Words:** COMPUTER; NETWORK; SYSTEM; SUPPORT; USER; MANAGE; STREAM; MEDIUM; SERVE; DISTRIBUTE; FILE; SERVICE; LOAD; STAGE; DELIVER

**Class Codes**

International Classification (Main): G06F, G06F-013/00, G06F-015/16, G06F-015/173

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-N01D1; T01-N02A3C; T01-N02B1A; T01-N03A1

...network system for supporting a user in managing streaming media assets, includes server systems having distributed file systems providing services for loading, staging, distributing and delivering streamed media assets

**Alerting Abstract ...NOVELTY** - Network system (10) includes application server (15) supporting **distributed file system** (26) and web sites (17). **Distributed file system** provides services, e.g. upload, storage, editing and check-in, that can be accessed by...

... **USE** - For allowing a user to manage a web site that offers streaming media assets for delivery across a data...

...ADVANTAGE - The **distributed file systems** may be employed by a hosting service to provide customers with tools that facilitate management ...

...and includes a feature that replaces non-scaleable processes like FTP with processes that can **move** multiple large files in a **single** operation. The **distributed file system** also eliminates or reduces manual meta file data creation, which hinder the rapid deployment of...

...a customer can change the name of a file, the start or stop times, the **associated** codes or other meta data while that file is on the remote server, without having...

...26 **Distributed file system**

## Original Publication Data by Authority

### Original Abstracts:

Server systems have **distributed file systems** that provides services for loading, staging, distributing and delivering streamed media content. The file system...

...stored on the host site, to configure the site as desired. To this end, the **distributed file system** provides a process for **allowing a user** to upload streaming media content from a client site to the host, or to another location accessible by the file system. A staging process **allows** the **user** to set or adjust meta-data characteristics of the uploaded media asset, and a distribution...

...Server systems have **distributed file systems** that provides services for loading, staging, distributing and delivering streamed media content. The file system...

...stored on the host site, to configure the site as desired. To this end, the **distributed file system** provides a process for **allowing a user** to upload streaming media content from a client site to the host, or to another location accessible by the file system. A staging process **allows** the **user** to set or adjust meta-data characteristics of the uploaded media asset, and a distribution...

...Server systems have **distributed file systems** that provides services for loading, staging, distributing and delivering streamed media content. The file system...

...stored on the host site, to configure the site as desired. To this end, the **distributed file system** provides a process for **allowing a user** to upload streaming media content from a client site to the host, or the another location accessible by the file system. A staging process **allows** the **user** to set or adjust meta-data characteristics of the uploaded media asset, and a distribution...

...serveur contenant des systemes de fichiers repartis qui fournissent des services permettant de charger, de **transférer**, de distribuer et de transmettre un contenu multimedia en continu. Ces systemes de fichiers peuvent...

...hôte ou vers un autre emplacement accessible par le système de fichiers. Un processus de **transfert** permet à l'utilisateur de déterminer ou de régler des caractéristiques de métadonnées des contenus...

### Claims:

...a media asset having content for being streamed across a data network, a check-in **process** for **allowing** a user to assign meta-data to the media asset, a storage process for replicating and for storing the media asset across storage devices distributed across the computer network **system**, and an **editing** process for allowing a user to modify the meta-data and for propagating modifications to the meta...

...process for receiving a media asset having content for being streamed across a data network, a **check-in** process for allowing a user to assign meta-data to the media asset, a storage process for replicating and for storing the media asset across storage devices distributed across the computer network **system**, and an **editing** process for allowing a user to modify the meta-data and for propagating modifications...

9/69,K/10 (Item 10 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0010304030 - Drawing available  
WPI ACC NO: 2000-617898/200059  
XRPX Acc No: N2000-457816

**Data processing system for global information network applications, has data bases to store sorted common fields and uncommon fields, separately**

Patent Assignee: LARSEN K N (LARS-I); PETERSON E (PETE-I)

Inventor: LARSEN K N; PETERSON E

Patent Family (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 6088700	A	20000711	US 1999369551	A	19990806	200059 B

Priority Applications (no., kind, date): US 1999369551 A 19990806

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6088700	A	EN	13	3	

#### Alerting Abstract US A

NOVELTY - A form field matcher (6) gets information Form Fields database (7) and industry common fields database (8), in form of unmatched fields back to external entity (1) to compare with common fields. The matcher, after verification, sorts common and uncommon fields and stores them in databases (9,10) respectively. An external entity (1) processes registration information of its form.

DESCRIPTION - The external entity submitted by a company is **mapped** once global information network or local network, to Form Registrar (2) which gives a unique identifier to these information and submits them to a Form Database (3). The External Entity also submits a HTML or scanned PDF version of the form which is given an unique identifier and stored in the database (3). A Form Field Identifier (4) parces out and identifies each data field on the submitted form and sends that information to a database (7). A common industry **mapper** (5) gets information from the database (3) and **maps** the information with an industry common fields database (8). The common field refers to matched fields and uncommon fields refers to unmatched fields.

USE - For global information network applications to make business with variety of companies doing electronic commerce, or contact companies or regulatory agencies.

ADVANTAGE - Eliminates incomplete and incorrect information **associated** with filling out forms by potential candidates or employees of a company. **Allows** the **user** to update their individual information automatically when they are completing a new form on their web browser.

DESCRIPTION OF DRAWINGS - The figure shows the flow diagram of data flow.

- 1 External entity
- 2 Registract
- 3,7,8 Databases
- 4 Identifier
- 5 Industry **mapper**

Title Terms/Index Terms/Additional Words: DATA; PROCESS; SYSTEM; GLOBE; INFORMATION; NETWORK; APPLY; BASE; STORAGE; SORT; COMMON; FIELD; SEPARATE

#### Class Codes

International Classification (Main): G06F-017/30

File Segment: EPI;  
DWPI Class: T01  
Manual Codes (EPI/S-X): T01-H07C; T01-H07C5; T01-J05B4A; T01-J05B4M;  
T01-J11C1

**Alerting Abstract DESCRIPTION** - The external entity submitted by a company is **mapped** once global information network or local network, to Form Registrar (2) which gives a unique...  
...on the submitted form and sends that information to a database (7). A common industry **mapper** (5) gets information from the database (3) and **maps** the information with an industry common fields database (8). The common field refers to matched...

...ADVANTAGE - Eliminates incomplete and incorrect information **associated** with filling out forms by potential candidates or employees of a company. **Allows** the **user** to update their individual information automatically when they are completing a new form on their...

...5 Industry **mapper**

#### **Original Publication Data by Authority**

#### **Original Abstracts:**

A global information **network** forms completion **data** processing **system** uses data stored in a database to automatically fill out data fields of the various...

...commerce, dealing with governmental agencies, or otherwise attempting to complete transactions over the global information **network**. The **data** processing **system** retrieves tagged information previously entered and stored in a database, and automatically inserts the data...

#### **Claims:**

...registration such that said form identifying information becomes uniquely registered form identifying information, storing said **uniquely** registered form identifying **information** in said **database**, said registration means being capable of assigning said form template a unique registration such that...

...a uniquely registered form template, storing said uniquely registered form template in said database, a **mapping** means, said **mapping** means being capable of sorting said uniquely registered form identifying information into common **group** information, said common **group** information being stored in said database, a form field identification means, said form field identification....

...means being capable of matching said uniquely identified form template data fields to said common **group** information such as to allow the matches to be verified by said entity using said...

...system, said uniquely identified form template data fields which are verifiably matched to said common **group** information becoming common form fields stored in said database, said uniquely identified form template data fields which are not verifiably matched to said common **group** information becoming unique form fields stored in said database, a second inputting means, said second...

...separating and tagging said form filling data into uniquely identified form filling data, storing said **uniquely** identified form filling **data** in said **database**, a form building means, said form building means retrieving

said uniquely registered form identifying information, said uniquely registered form template, said common **group** information, said common form fields, said unique form fields, and said **uniquely** identified form filling **data** from said **database** a merging means, said merging **means** mapping said uniquely identified form filling data into said unique data fields and said **common** group information into said common form fields of said uniquely registered form template creating a...

13/69,K/15 (Item 15 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
(c) 2006 The Thomson Corporation. All rts. reserv.

0010800595 - Drawing available

WPI ACC NO: 2001-416529/

XRPX Acc No: N2001-308538

**System database access regulating method involves allowing user to access data object, when interval value for one group is within interval value for other group containing data requesters**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC)

Inventor: LU Q; TENG S

**Patent Family** (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
US 6219667	B1	20010417	US 199886272	A	19980528	200144 B

Priority Applications (no., kind, date): US 199886272 A 19980528

#### Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6219667	B1	EN	25	15	

#### Alerting Abstract US B1

NOVELTY - A **group** gm' with data requesters, is allowed to access a data object of database. The **group** and another **group** gn' with one data requester, are **mapped** to respective interval values. The one data requester is allowed to access the object, when the requester's interval value for **group** gn' is contained within interval value for **group** gm'.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

1. Recording medium storing program for regulating access to a system's database;
2. Digital signal processing apparatus to regulate access to a system's database

USE - For system database access regulation in Internet application.

ADVANTAGE - Implements efficient representation of access **group** hierarchy that can be **used** for **real - time access** right checking. **Allows** faster **access** to object by user due to reduced computation cost by enabling handling of enormous number of objects, **groups** and users.

DESCRIPTION OF DRAWINGS - The figure shows the interval **mapping0** for a directed acyclic graph.

**Title Terms/Index Terms/Additional Words:** SYSTEM; DATABASE; ACCESS; REGULATE; METHOD; ALLOW; USER; DATA; OBJECT; INTERVAL; VALUE; ONE; **GROUP**; CONTAIN

#### Class Codes

International Classification (Main): G06F-017/00

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-H07C5E; T01-J05B2B; T01-J05B4M; T01-S03

**...access regulating method involves allowing user to access data object, when interval value for one group is within interval value for other group containing data requesters**

**Original Titles:**

Efficient large-scale access control for internet / intranet information systems .

**Alerting Abstract** ...NOVELTY - A group gm' with data requesters, is allowed to access a data object of database. The group and another group gn' with one data requester, are mapped to respective interval values. The one data requester is allowed to access the object, when the requester's interval value for group gn' is contained within interval value for group gm'....ADVANTAGE - Implements efficient representation of access group hierarchy that can be used for real - time access right checking. Allows faster access to object by user due to reduced computation cost by enabling handling of enormous number of objects, groups and users...

...DESCRIPTION OF DRAWINGS - The figure shows the interval mapping for a directed acyclic graph.

**Title Terms**.../Index Terms/Additional Words: GROUP ;

**Original Publication Data by Authority**

**Original Abstracts:**

...stored in a database in which there are a large number of users and access groups . The invention uses a representation of a hierarchical access group structure in terms of intervals over a set of integers and a decomposition scheme that reduces any group structure to ones that have interval representation. This representation allows the problem for checking access...

**Claims:**

...to regulate access to a systemprimes database using interval containment control, comprising: allowing a first group gm comprising one or more data requesters access to a data object contained in the database; mapping gm to a first interval value and a second group gn to a second interval value, wherein gncontains at least one data requester U; and...  
?

Set	Items	Description
S1	1725964	FEDERAT? OR CONSOLIDAT? OR AGGREGAT? OR COMBIN? OR JOIN??? OR GROUP??? OR ASSOCIAT?
S2	1531147	MIGRAT??? OR MAP OR MAPS OR MAPP??? ? OR MOVING? OR TRANSF- ER? OR TRANSLAT? OR MOVE??? ?
S3	231303	(LOCAL OR INDEPEND? OR STAND()ALONE OR INDIVIDUAL? OR SING- L? OR SEPARATE? OR SINGULAR? OR UNIQUE? OR LONE? OR ONE)(3N)(- FILESYSTEM? ? OR FILE()SYSTEM? ? OR COMPUT? OR DATABASE? OR PC OR NODE? ? OR TERMINAL? OR WORKSTATION? OR WORK()STATION?) OR CLIENT?
S4	117824	(NETWORK? OR INTERNET? OR INTRANET? OR DISTRIBUT? OR ETHER- NET? OR EXTRANET? OR SUBNET? OR LAN? ? OR WAN? ? OR WLAN)(3W)- (FILESYSTEM? ? OR FILE()SYSTEM? ? OR COMPUT? OR DATABASE? OR - PC OR NODE? ? OR TERMINAL? OR WORKSTATION? OR WORK()STATION?) OR CLIENT?
S5	672064	(ENABL? OR ALLOW??? OR PERMIT? OR FACILITAT? OR AUTHORI? OR PROVID? OR GIVE? ? OR GIVING OR GRANT?)(3N)(ACCESS? OR ENTRY OR ENTRIE? ? OR USE? ? OR USING OR UTILI? OR ENTREE? OR EDIT?- ?? OR READWRITE? OR READ()WRITE)
S6	46185	S5(5N)(WHILE OR STILL OR DURING OR DESPITE OR CONCURRENT? - OR LIVE OR LIVETIME? ? OR RUN? ? OR RUNNING OR WHILE()RUNNING OR REALTIME OR REAL()TIME?)
S7	1511	S1(100N)S2(100N)S3(100N)S4(100N)S6
S8	251	S7 AND S1(50N)S2(50N)S6
S9	64	S8(100N)(FEDERAT? OR MIGRAT?)
S10	33	S9 AND S1(10N)S2(10N)S3(10N)S4(10N)S6
S11	29	S10 NOT (AD>2003 OR AD=2004:2006)
S12	31	S9 NOT S10
S13	22	S12(100N)FILE? ?(2N)MIGRAT?
S14	14	S13 NOT ACCENTUR?
S15	1260	S7 NOT S8
S16	24	S15(100N)FILE? ?(2N)MIGRAT?
S17	23	S16 NOT ACCENTURE

File 348:EUROPEAN PATENTS 1978-2006/ 200650

(c) 2006 European Patent Office

File 349:PCT FULLTEXT 1979-2006/UB=20061214UT=20061207

(c) 2006 WIPO/Thomson



11/5,K/5 (Item 5 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
(c) 2006 European Patent Office. All rts. reserv.

01379018

TRANSFORMATION OF OBJECTS BETWEEN A COMPUTER PROGRAMMING LANGUAGE AND A  
DATA REPRESENTATION LANGUAGE

TRANSFORMATION VON OBJEKTEN ZWISCHEN EINER RECHNERPROGRAMMIERSPRACHE UND  
EINER DATEN-DARSTELLUNGSSPRACHE

TRANSFORMATION D'OBJETS ENTRE UN LANGAGE DE PROGRAMMATION ET UN LANGAGE DE  
REPRESENTATION DE DONNEES

PATENT ASSIGNEE:

Sun Microsystems, Inc., (2616592), 4150 Network Circle, Santa Clara,  
California 95054, (US), (Proprietor designated states: all)

INVENTOR:

SLAUGHTER, Gregory, L., 3326 Emerson Street, Palo Alto, CA 94306, (US)

SAULPAUGH, Thomas, E., 6938 Bret Harte Drive, San Jose, CA 95120, (US)

TRAVERSAT, Bernard, A., 701 Fremont Street, Menlo Park, CA 94025, (US)

ABDELAZIZ, Mohamed, M., 78 Cabot Avenue, Santa Clara, CA 95051, (US)

DUIGOU, Michael, J., 33928 Capulet Circle, Fremont, CA 94555, (US)

LEGAL REPRESENTATIVE:

Davies, Simon Robert (75453), D Young & Co, 21 New Fetter Lane, London,  
EC4A 1DA, (GB)

PATENT (CC, No, Kind, Date): EP 1290547 A2 030312 (Basic)

EP 1290547 B1 040107

WO 2001086427 011115

APPLICATION (CC, No, Date): EP 2001937315 010509; WO 2001US15276 010509

PRIORITY (CC, No, Date): US 202975 P 000509; US 208011 P 000526; US 209430

P 000602; US 209140 P 000602; US 209525 P 000605; US 663563 000915

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

RELATED DIVISIONAL NUMBER(S) - PN (AN):

(EP 2003021805)

INTERNATIONAL PATENT CLASS (V7): G06F-009/00

CITED PATENTS (EP B): WO /17748 A

CITED REFERENCES (EP B):

ALLAIRE J: "The Emerging Distributed Web Part 3/4 and 4/4" , September  
1998 (1998-09), pages 1-9, XP002135919

MUELLER-WILKEN S ET AL: "XML and Jini - On Using XML and the JAVA Border  
Service Architecture to integrate mobile devices into the JAVA  
Intelligent Network Infrastructure" , 29 February 2000 (2000-02-29),  
XP002188507

SIMEONOV S: "WDDX: Distributed Data for the Web (URL)" , 7 December 1998  
(1998-12-07), pages 1-7, XP002135918

M. JOHNSON: "XML JavaBeans, Part 2" JAVA WORLD, Online! March 1999  
(1999-03), pages 1-8, XP002212704 Retrieved from the Internet:

<URL:http://www.javaworld.com/javaworld/jw-03-1999/jw-03-beans p.html>  
retrieved on 2002-09-06!;

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 020109 A2 International application. (Art. 158(1))

Application: 020109 A2 International application entering European  
phase

Application: 030312 A2 Published application without search report

Examination: 030312 A2 Date of request for examination: 20021206

Assignee: 030423 A2 Transfer of rights to new applicant: Sun  
Microsystems, Inc. (2616592) 4150 Network  
Circle Santa Clara, California 95054 US

Change: 030507 A2 Inventor information changed: 20030314

Change: 031126 A2 Application number of divisional application  
 (Article 76) changed: 20031008  
 Grant: 040107 B1 Granted patent  
 Lapse: 040929 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): FI  
 20040107, SE 20040407,  
 Lapse: 041006 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): FI  
 20040107, GR 20040407, SE 20040407,  
 Lapse: 040929 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): FI  
 20040107, SE 20040407,  
 Lapse: 041006 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): FI  
 20040107, GR 20040407, SE 20040407,  
 Lapse: 041020 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, FI 20040107, GR 20040407, SE  
 20040407,  
 Lapse: 041027 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, CH 20040107, LI 20040107, FI  
 20040107, GR 20040407, SE 20040407,  
 Lapse: 041110 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, CH 20040107, LI 20040107, ES  
 20040418, FI 20040107, GR 20040407, SE  
 20040407,  
 Oppn None: 041229 B1 No opposition filed: 20041008  
 Lapse: 050105 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, BE 20040107, CH 20040107, LI  
 20040107, ES 20040418, FI 20040107, GR  
 20040407, SE 20040407,  
 Lapse: 050112 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, BE 20040107, CH 20040107, LI  
 20040107, DK 20040407, ES 20040418, FI  
 20040107, GR 20040407, SE 20040407,  
 Lapse: 050316 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, BE 20040107, CH 20040107, LI  
 20040107, DK 20040407, ES 20040418, FI  
 20040107, GR 20040407, MC 20040531, SE  
 20040407,  
 Lapse: 050608 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, BE 20040107, CH 20040107, LI  
 20040107, DK 20040407, ES 20040418, FI  
 20040107, GR 20040407, LU 20040509, MC  
 20040531, SE 20040407,  
 Lapse: 050615 B1 Date of lapse of European Patent in a  
 contracting state (Country, date): AT  
 20040107, BE 20040107, CH 20040107, LI  
 20040107, DK 20040407, ES 20040418, FI  
 20040107, GR 20040407, IE 20040510, LU  
 20040509, MC 20040531, SE 20040407,  
 Change: 060322 B1 Title of invention (German) changed: 20060322  
 Change: 060322 B1 Title of invention (English) changed: 20060322  
 Change: 060322 B1 Title of invention (French) changed: 20060322  
 LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200402	2173
CLAIMS B	(German)	200402	2133
CLAIMS B	(French)	200402	2551
SPEC B	(English)	200402	66522
Total word count - document A			0
Total word count - document B			73379
Total word count - documents A + B			73379

...SPECIFICATION driver and/or an interface to the driver into the look-up service. When a **client** wants to use the printer, the driver and driver interface are downloaded from the look-up service to the **client**. This code mobility means that **clients** can take advantage of services from the network without pre-installing or loading drivers or...

14/5,K/13 (Item 4 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
(c) 2006 WIPO/Thomson. All rts. reserv.

00848455 \*\*Image available\*\*

**DYNAMIC FILE SYSTEM CONFIGURATIONS**

**CONFIGURATIONS DYNAMIQUES DE SYSTEMES DE FICHIERS**

Patent Applicant/Assignee:

TRICORD SYSTEMS INC, 2905 Northwest Blvd., Ste. 20, Plymouth, MN 55441,  
US, US (Residence), US (Nationality)

Inventor(s):

FREY Alexander H Jr, 388 Waycliffe North, Wayzata, MN 55391-1390, US,

Legal Representative:

THE LAW OFFICES OF COE F MILES P C (agent), 15150 Middlebrook Drive,  
Houston, TX 77058, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200182058 A2-A3 20011101 (WO 0182058)

Application: WO 2001US13180 20010424 (PCT/WO US01013180)

Priority Application: US 2000558318 20000425

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Main International Patent Class (v7): G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7939

**English Abstract**

A first file system configuration (104) may be dynamically migrated (morphed) into a second file system configuration (106) on an object-by-object basis. During the migration operation, objects (directories and files, data and metadata) may be accessed by client applications through either the first or second file system configurations. That is, objects are transparently shared between co-active first and second file system configurations (104 and 106). Additionally, a file system morph operation already in progress may be canceled with all objects previously morphed to the second file system configuration (106) returned to the first file system configuration (104).

**French Abstract**

Selon l'invention, on effectue la migration dynamique (morphage) d'une premiere configuration de systeme de fichiers (104) en une deuxieme configuration de systeme de fichiers (106) sur la base du principe "objet par objet". Lors de l'operation de migration, l'accès aux objets (repertoires et fichiers, donnees et metadonnees) peut s'effectuer au moyen des applications clientes a travers une premiere ou une deuxieme configurations de fichiers. Ainsi, les objets sont partages de maniere transparente entre les premiere ou deuxieme configurations (104 et 106) du systeme. En outre, une operation de morphage du systeme de fichiers qui a ete lancee peut etre annulee, et tous les objets deja morphes en deuxieme configuration (106) du systeme sont retournes dans la premiere configuration du systeme (104).

**Legal Status (Type, Date, Text)**

Publication 20011101 A2 Without international search report and to be republished upon receipt of that report.

Search Rpt 20040506 Late publication of international search report

Republication 20040506 A3 With international search report.

Republication 20040506 A3 Before the expiration of the time limit for

amending the claims and to be republished in the event of the receipt of amendments.

Fulltext Availability:  
Detailed Description  
Claims

#### Detailed Description

... by the file system. The super block describes the storage to be used by the **file system**, system-wide parameters of the file system and how to find the object list...

...ownership, access rights, file size, and location of the file's data in the file **system**. **One** inode is the root inode of the file system. It is this inode through which...

...file systems allow users (e.g., system administrators) to modify the configuration of an operational **file system** to include **one** or more additional storage units (or volumes). Still other prior art file systems allow users...

...in accordance with the invention.

#### Summa

In one embodiment the invention provides a method to **migrate** objects from a first file system configuration to a second file system configuration. The method...

...are jointly active, identifying one or more objects in the first file system configuration to **migrate** to the second file system configuration and **migrating** (morphing) the one or more objects to the second file system configuration **while allowing access** to the objects through both the first and second file system configurations..

In another embodiment...

...system morph process in accordance with one embodiment of the invention.

Figure 3 illustrates a **distributed computer** storage system.

Figure 4 shows the computer storage system of FIG. 3 after a morph...

...accordance with one embodiment of the invention.

#### Detailed Descriptio

Techniques (including methods and devices) to **migrate** a file system from a first configuration to a second, co-active, configuration are described...

...only and are not to be considered limiting in any respect.

Referring to FIG. 1, **one** embodiment of a computer system 100 in accordance with the invention includes file system 102 two (CONFIG-2 106) defines a **file system** in which data is distributed across two storage sub-systems (STRG- I 1 10...

#### Claim

... 12, wherein attempting to access  
comprises:  
identifying a first memory management process in the first **file system**

configuration associated with the resource; and  
requesting the resource from the first memory management...

...second memory management process in the second file system  
configuration, the second memory management process **associated** with the  
resource.

17 The computer program product of claim 16, wherein accessing the  
resource...

...to the request, the resource from the second memory management process.

18 A method to **migrate** objects from a first file system configuration  
to a second  
file system configuration, comprising:  
specifying...

...configuration;  
initializing the second file system configuration, the first and second  
file  
system configurations being **jointly** active;  
identifying one or more objects in the first file system configuration to  
**migrate**  
to the second file system configuration; and  
- 19 **migrating** the one or more objects to the second file system  
configuration **while allowing access** to the objects through both the  
first and second file system configurations.

19 The method of claim 18, further comprising halting each memory  
management process **associated** with the first file system configuration.

20 The method of claim 19, further comprising deleting...

...file system configuration.

21 The method of claim 18, wherein the act of specifying comprises:  
**associating** one or more memory management processes with the second  
file  
system configuration, wherein each of...

...and assignments to each of one or more memory control devices associated  
with the first **file** system configuration.

24 The method of claim 21, wherein the act of initializing comprises:  
booting...wherein the storage use map indicates a first portion of  
storage allocated to the first **file** system configuration, a second  
portion of storage allocated to the second file system configuration, and  
...

...file system configuration;  
initializing the second file system configuration, the second file system  
configuration being **jointly** active with a first file system  
configuration; identifying one or more objects in the first file system  
configuration to **migrate**  
to the second file system configuration; and  
**migrating** the one or more objects to the second file system  
configuration **while allowing access** to the objects through both the  
first and second file system configurations.

33 The computer program product of claim 32, wherein the method further  
comprises halting each memory management process **associated** with the  
first file system configuration.

34 The computer program product of claim 32, wherein the method further comprises halting each of one or more memory management processes **associated** with the first file system configuration.

35 The computer program product of claim 32, wherein the method further comprises:

canceling the **migration** of the one or more objects after a first portion of a first object of the one or more objects has been **migrated** to the second file system configuration and before a last portion of a last object of the one or more objects has been **migrated** to the second file system configuration; and

- 22 restoring those portions of the one or more objects **migrated** to the second file system configuration to the first file system configuration.

36 The computer...

...not yet

allocated to the first or second file system configurations;

allocating, to the second **file** system configuration, sufficient storage from the

third portion of storage to store the one or...

14/5,K/12 (Item 3 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
(c) 2006 WIPO/Thomson. All rts. reserv.

01153716 \*\*Image available\*\*

**SEMANTIC KNOWLEDGE RETRIEVAL MANAGEMENT AND PRESENTATION  
SYSTEME ET PROCEDE POUR UNE EXTRACTION, UNE GESTION, UNE CAPTURE, UN  
PARTAGE, UNE DECOUVERTE, UNE DISTRIBUTION ET UNE PRESENTATION DE  
CONNAISSANCES SEMANTIQUES**

Patent Applicant/Assignee:

NERVANA INC, 10838 Main Street, Bellevue WA, 98004, US, US (Residence),  
US (Nationality)

Inventor(s):

OMOIGUI Nosa, 549 239th Avenue S.E., Redmond, WA 98074, US,

Legal Representative:

BLACK Richard T (agent), Black Lowe & Graham PLLC, 816 Second Avenue,  
Seattle, WA 98104, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200475466 A2-A3 20040902 (WO 0475466)

Application: WO 2004US4674 20040217 (PCT/WO US04004674)

Priority Application: US 2003447736 20030214

Designated States:

(All protection types applied unless otherwise stated - for applications  
2004+)

AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM  
DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO  
RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) BW GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class (v7): G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 160617

**English Abstract**

The present invention is directed to an integrated implementation framework and resulting medium for knowledge retrieval, management, delivery and presentation. The system includes a first server component that is responsible for adding and maintaining domain-specific semantic information (item 50) and a second server component (item 80) that hosts semantic and other knowledge for use by the first server component that work together to provide text and time-sensitive semantic information retrieval services to clients operating a presentation platform via a communication medium (item 10). Within the system, all objects or events given hierarchy are active Agents (item 90) semantically related to each other and representing queries (comprised of underlying action code) that return data objects for presentation to the client according to a predetermined and customizable theme or "Skin". This system provides various means for the client to customize and "blend" Agents and the underlying related queries to optimize the presentation of the resulting information (item 30).

**French Abstract**

L'invention concerne un cadre d'implémentation intégré et un support



resultant pour une extraction, une gestion, une capture, un partage, une découverte, une distribution et une presentant de connaissances. Ce systeme est responsable de la maintenance d'informations semantiques.

Legal Status (Type, Date, Text)

Publication 20040902 A2 Without international search report and to be republished upon receipt of that report.

Search Rpt 20041028 Late publication of international search report

Republication 20041028 A3 With international search report.

Republication 20041028 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Fulltext Availability:

Detailed Description

Detailed Description

... on Magnetic Resonance Imaging

Experts in Magnetic Resonance Imaging

Newsmakers in Magnetic Resonance Imaging

Interest **Group** in Magnetic Resonance Imaging

Conversations on Magnetic Resonance Imaging

Annotations on Magnetic Resonance Imaging

Annotated...combination, no single feature is necessary to the practice of the invention, nor any particular **combination** of features.

Also, in this application, reference is made to the same terms as are... that watch windows will fade in when there are new semantic results. This feature also **allows** the **user** to manage his/her attention **during** information interaction in a personal and semantic way.

Docking, Closing, Minimizing, Maximizing - these features, as...

...of the Information Nervous System. Entities allow the user to create a contextual definition that **maps** to how they

. People 7. Meetings

2. Teams 8. Organizations

3. Action Items 9. Partners...

...etc. In other words, an entity is a first-class smart object.

The semantic runtime **client** dynamically creates SQLML by appending the rich metadata of the entity to the subject of...

14/5,K/9 (Item 9 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
(c) 2006 European Patent Office. All rts. reserv.

00712602

A distributed database architecture and distributed database management system for open network evolution.

Architektur einer verteilten Datenbank und System zum Verwalten einer verteilten Datenbank für die Entwicklung in einem offenen Netzwerk.

Architecture d'une base de données distribuée et système pour la gestion d'une base de données distribuée pour évolution dans un réseau ouvert.

PATENT ASSIGNEE:

Siemens Stromberg-Carlson, (1634230), 900 Broken Sound Parkway, Boca Raton, Florida 33487, (US), (applicant designated states: AT;BE;CH;DE;DK;ES;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)

INVENTOR:

Oulid-Aissa, Mourad, 22173 Martella Avenue, Boca Raton, FL 33433, (US)  
Cole, Charles Allen, 10033 NW 20th Street, Coral Springs, FL 33071, (US)  
Tavanyar, Simon Edwin, 1387 Black Willow Trail, Altamonte Springs, FL 32714, (US)

LEGAL REPRESENTATIVE:

Allen, Derek et al (55491), Siemens Shared Services Limited, c/o Siemens AG, P.O. Box 22 16 34, 80506 Munich, (DE)

PATENT (CC, No, Kind, Date): EP 675451 A2 951004 (Basic)  
EP 675451 A3 961204

APPLICATION (CC, No, Date): EP 95102702 950224;

PRIORITY (CC, No, Date): US 220994 940330; US 221300 940330; US 221320 940330; US 220992 940330

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE

INTERNATIONAL PATENT CLASS (V7): G06F-017/30;

ABSTRACT EP 675451 A3

A distributed database management (DDBMS) system for switching applications that combines rapid feature deployment with high real-time performance. The system architecture encompasses a new software boundary between application and database, yet provides the benefits of open standard interfaces and distributed transaction control. To accomplish this dichotomy, an object-oriented schema is used to arrange the DDBMS as an intelligent service provider, separating services from physical location and implementation. A software containment approach is utilized to optimize interfaces based on grouping of data so as to permit application-specific routines to be "plugged-into" the database. The DDBMS is arranged to address extendibility and real-time performance needs of capabilities such as ISDN and IN is switching offices and network nodes. (see image in original document)

ABSTRACT WORD COUNT: 140

LEGAL STATUS (Type, Pub Date, Kind, Text):

Assignee:	000628 A2	Transfer of rights to new applicant: Siemens Telecom Networks (1634231) 900 Broken Sound Parkway Boca Raton, FL 33487 US
Application:	951004 A2	Published application (A1with Search Report ;A2without Search Report)
Withdrawal:	051102 A2	Date of withdrawal of application: 20050907
Change:	001102 A2	Legal representative(s) changed 20000912
Assignee:	001102 A2	Transfer of rights to new applicant: Siemens Information and Communication Networks Inc. (2616911) 900 Broken Sound Parkway Boca Raton, FL 33487 US
Change:	000628 A2	Legal representative(s) changed 20000511

Change: 040317 A2 Legal representative(s) changed 20040128  
 Search Report: 961204 A3 Separate publication of the European or  
 International search report  
 Examination: 970319 A2 Date of filing of request for examination:  
 970130  
 \*Examination: 970409 A2 Date of filing of request for examination  
 (change): 970121  
 Change: 980708 A2 Representative (change)  
 Examination: 991110 A2 Date of dispatch of the first examination  
 report: 19990923

LANGUAGE (Publication,Procedural,Application): English; English; English  
 FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB95	5729
SPEC A	(English)	EPAB95	15774
Total word count - document A			21503
Total word count - document B			0
Total word count - documents A + B			21503

...SPECIFICATION to a transaction, namely, access with concurrency control,  
 and access without concurrency control where a **client** application is  
 not concerned with possible collisions.

(B) Database Access 303

The database access software...

...heavily on information in data dictionary 304, and have limited scope.

In contrast, service database **access** module 321 is **provided** for  
**real - time** critical applications. This module has routines which are  
 "intelligent" application-specific routines that implement a...

...to determine relevant data definition and access information -- for  
 example, any special handling and data **grouping**. Dictionary 304 is  
 composed of three tables, namely, the **translation** tables, the  
 definition tables, and the location tables. Access to dictionary 304 is  
 through procedure...

...Data Dictionary.

This section expands on the design principles of transparency and  
 efficiency by a **mapping** best illustrated by the following TABLES I and  
 II for transparency and efficiency, respectively: (Table omitted) (Table  
 omitted)

#### 1. DISTRIBUTED DATABASE PRINCIPLES

The DDBMS is arranged to support the distribution of data across  
 different system nodes...

...transient data. Informally, each object class corresponds to a logical  
 data table that may be **mapped** to a file, or may be further partitioned  
 into several sub-tables, thus resulting in...

...of a server to be changed (e.g., layout of physical data) without  
 impacting the **client** function. Data location transparency permits the  
 data copies to be **migrated** across nodes without impacting the **client**  
 applications. Fragmentation and copy transparencies allow for the  
 changing of different database partitions over time without impact on the  
**client** applications. The layering is discussed with reference to FIG.  
 5, which is a more detailed...the DDBMS coordinates data accesses when it  
 updates data across multiples nodes, or when it **combines** data in order  
 to construct an application view. The result is that, to the applications  
 ...

17/5,K/7 (Item 3 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
(c) 2006 WIPO/Thomson. All rts. reserv.

01176364 \*\*Image available\*\*

**TRANSPARENT FILE MIGRATION USING NAMESPACE REPLICATION**

**MIGRATION TRANSPARENTE DE FICHIERS PAR REPLICATION D'ESPACES DE NOMMAGE**

Patent Applicant/Assignee:

NEOPATH NETWORKS INC, 3945 Freedom Circle,, Suite 300, Santa Clara, CA  
95054, US, US (Residence), US (Nationality), (For all designated states  
except: US)

Patent Applicant/Inventor:

WONG Thomas K, 1118 Mataro Ct., Pleasanton, CA 94566, US, US (Residence),  
US (Nationality), (Designated only for: US)

TSIRIGOTIS Panagiotis, 1575 Tenaka Pl., #D-5, Sunnyvale, CA 94087, US, US  
(Residence), GR (Nationality), (Designated only for: US)

IYENGAR Anand, 4306 Collins CT., #204, Mountain View, CA 94040, US, US  
(Residence), US (Nationality), (Designated only for: US)

CHAWLA Rajeev, 5819 Carmel Way, Union City, CA 94589, US, US (Residence),  
US (Nationality), (Designated only for: US)

Legal Representative:

CARTWRIGHT Dorian (et al) (agent), Fenwick & West LLP, 801 California  
Street, Mountain View, CA 94041, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200497572 A2-A3 20041111 (WO 0497572)

Application: WO 2004US12847 20040426 (PCT/WO US04012847)

Priority Application: US 2003465578 20030424; US 2003465579 20030424; US  
2004831376 20040423; US 2004831701 20040423

Designated States:

(All protection types applied unless otherwise stated - for applications  
2004+)

AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM  
DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO  
RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PL PT RO  
SE SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) BW GH GM KE LS MW MZ NA SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class (v7): G06F-017/30

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7271

**English Abstract**

A NAS switch provides file migrations in a NAS storage network that are transparent to the clients. A source file server exports an original NAS file handles indicative of object locations on the source file server to the NAS switch. The NAS switch modifies the original NAS file handles to an internal file system and maps the original NAS file handles to a switch file handles independent of location. The NAS switch exports the switch file handles to a client. The client looks-up objects and makes NAS requests to the source file server using switch file handles. The NAS switch performs file migration by first replicating the namespace containing data to be migrated from source file server to a destination file server. Separately, the NAS replicates data which is a relatively longer process than the namespace replication. During data replication,

namespace access requests for objects are directed to the replicated namespace. After data replication, file object requests for migrated objects are redirected to the destination file server in a process that is transparent to the client.

#### French Abstract

Un commutateur NAS assure des migrations de fichiers transparentes pour les clients dans un reseau de stockage NAS. Un serveur de fichiers source exporte vers le commutateur NAS des indicateurs de fichiers NAS originaux indiquant l'emplacement d'objets sur le serveur de fichiers source. Le commutateur NAS modifie les indicateurs de fichiers NAS originaux en un systeme de fichiers interne, et mappe les indicateurs de fichiers NAS originaux en des indicateurs de fichiers de commutateur independants de l'emplacement. Le commutateur NAS exporte les indicateurs de fichiers de commutateur vers un client. Le client consulte les objets et adresse des demandes NAS au serveur de fichiers source a l'aide d'indicateurs de fichiers de commutateur. Le commutateur NAS realise la migration de fichiers tout d'abord en repliquant l'espace de nommage contenant des donnees destinees a etre migrees d'un serveur de fichiers source a un serveur de fichiers de destination. Le NAS replique les donnees separement, ce qui constitue un processus relativement plus long que la replication de l'espace de nommage. Lors de la replication des donnees, les demandes d'objets relevant de l'acces a un espace de nommage sont orientees vers l'espace de nommage replique. Apres la replication des donnees, les demandes d'objets migres sont reorientees vers le serveur de fichiers de destination, en un processus qui est transparent pour le client.

#### Legal Status (Type, Date, Text)

Publication 20041111 A2 Without international search report and to be republished upon receipt of that report.  
Search Rpt 20050106 Late publication of international search report  
Republication 20050106 A3 With international search report.  
Republication 20050106 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

#### Fulltext Availability:

Detailed Description

#### Detailed Description

TRANSPARENT **FILE** MIGRATION USING NAMESPACE REPLICATION

Inventors: Thomas K. Wong, Panagiotis Tsirigotis

Anand lyengar, and Raj eev...

...of the operating system or an application running on the client. But heterogeneous **client** operating systems may require additional copies of each file to be stored on the storage...

...One drawback with NAS file servers is that there is no centralized control.

Accordingly, each **client** must maintain communication channels between each of the NFS file servers separately. When NAS file servers are either added or removed from the storage network, each **client** must mount or unmount directories for the associated storage resources as appropriate. This is particularly...

...an identically configured back-up NAS file server.

[00061 A related drawback is that a **client** must be reconfigured each

time a file is relocated within the storage network, such as during file migration or file replication. The **client** generates a NAS file handle that identifies a physical location of the directory or file object on the file server. To access the object, the **client** sends an object access request directly to the NAS file server. When the file is...

...always available.

[00081 Therefore, what is needed is a network device to provide transparency to **clients** of file servers such as NAS file servers. Furthermore, there is a need for the network device to allow file migrations to occur without the need for **client** reconfiguration. Moreover, there is a need for the network device to **provide access** to the data **during** file migration.

2

#### BFJEF SUMMARY OF THE INVENTION

[0009] The present invention meets these needs by providing file migrations in a decentralized storage network that are transparent to a **client**. A NAS switch, in the data path of a **client** and NAS file servers, reliably coordinates file migration of a source file server to a ...

...system configured according to the present invention comprises the NAS switch in communication with the **client** on a front-end of the storage network, and both a source file server and...

...are independent of a location. The NAS switch then exports switch file handles to the **client**. In response to subsequent object access requests from the client, the NAS switch substitutes switch...

...is a flow chart illustrating a method of replicating a directory hierarchy of a source **file** server according to one embodiment of the present invention.

[00201 FIG. 7 is a flow...

17/5,K/16 (Item 12 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
(c) 2006 WIPO/Thomson. All rts. reserv.

00792445 \*\*Image available\*\*

**IP VIRTUALIZATION**  
**VIRTUALISATION IP**

Patent Applicant/Assignee:

EJASENT INC, 2490 Charleston Road, Mountain View, CA 94043, US, US  
(Residence), US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

HIPP Emily L, 4349 Evans Avenue, Oakland, CA 94602, US, US (Residence),  
US (Nationality), (Designated only for: US)  
HIPP Burton A, 4117 E. Haack Ct., Elk Grove, CA 95758, US, US (Residence),  
US (Nationality), (Designated only for: US)

Legal Representative:

ASHBY David C (et al) (agent), Flehr, Hohbach, Test, Albritton & Herbert  
LLP, Suite 3400, 4 Embarcadero Center, San Francisco, CA 94111-4187, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200125949 A1 20010412 (WO 0125949)  
Application: WO 2000US27583 20001005 (PCT/WO US0027583)  
Priority Application: US 99157727 19991005; US 99157728 19991005; US  
99157729 19991005; US 99157833 19991005; US 99157834 19991005

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM  
TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class (v7): G06F-015/16

International Patent Class (v7): G06F-015/173

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 8998

**English Abstract**

A method, system and computer program product for creating a virtual network identity, by using a virtual IP address and hostname, in a software application for the express purpose of making the application node-independent, wherein node is defined as a particular machine running a given operating system at a specific moment in time. By virtualizing the IP address and hostnames, a running software application can be moved from one node to another with a computer network, allowing for process migration and the reallocation of system resources. Overall structure of the present invention comprises: remote users (102) that can connect through a computer network (100) to a private network of computers (106) protected by firewall (104). Computer network (106) comprises a plurality of computers (150), wherein computer network (106) is implemented in the form of virtual environments (110-1) and (110-2).

**French Abstract**

L'invention concerne un procede, un systeme et un produit de programme

informatique permettant de creer une identite de reseau virtuel faisant intervenir une adresse IP et un nom d'hote dans une application logicielle dans le but tres precis de rendre l'application independante d'un noeud, qui est defini comme une machine particuliere executant un systeme d'exploitation donne a un moment determine. En virtualisant l'adresse IP et les noms d'hote, une application executant un logiciel peut etre deplacee d'un noeud a un autre par un reseau informatique, permettant ainsi la migration du processus et la reaffectation de ressources du systeme. La structure entiere de cette invention comprend des utilisateurs a distance (102) pouvant se connecter via un reseau informatique (100) a un reseau prive d'ordinateurs (106) protege par pare-feu (104). Le reseau informatique (106) est equipe d'une pluralite d'ordinateurs (150) et mis en oeuvre sous forme d'environnements virtuels (110-1, 110-2).

Legal Status (Type, Date, Text)

Publication 20010412 A1 With international search report.

Examination 20010927 Request for preliminary examination prior to end of 19th month from priority date

Correction 20020516 Corrected version of Pamphlet: pages 1/18-18/18, drawings, replaced by new pages 1/18-18/18; due to late transmittal by the receiving Office

Republication 20020516 A1 With international search report.

Fulltext Availability:

Detailed Description

Detailed Description

... an on demand basis.

One impediment to providing an on-demand computer infrastructure involves application **migration**. A migrating application instance, along with any applications the migrating instance is communicating with, must maintain a consistent view of the **migrating** application's network identity for interoperability. For example, consider a client application that is communicating...

...connections to a server. Between the first and the second connection, however, the server gets **moved** to a network node having the IP address a.b.c.z. If the IP...

...an application. The virtualization of the network parameters, IP address and hostname, allows for the **migration** of an application instance. By virtualizing these network parameters, a virtual network identity (VNI) is...

...an IP address is associated with a network interface, either physical or loopback, of an **individual computer**. With the virtual IP address method and system of the present invention, the IP address...

...identifiers;

FIG. 11 illustrates the allocation of a virtual resource;

FIG. 12 illustrates the **translation** of a virtual resource to a system resource; FIG. 13 illustrates the **translation** of a system resource to a virtual resource; FIG. 14 is a flowchart illustrating the logical sequence of steps executed to create a virtual **translation** table;

FIG. 15 is a flowchart illustrating the logical sequence of steps executed to **translate** a virtual resource;

FIG. 16 illustrates the resolution of the local hostname for an



application...

...17 illustrates how a server application running within a VNI is connected to by a **client** application; and

FIG. 18 illustrates how a **client** application running within a VNI connects with a server application.

3

DETAILED DESCRIPTION

A. Snapshot...

...Also included in computer 150 are keyboard 158, pointing device 160, and monitor 162, which **allow** a **user** to interact with computer 150 during execution of software programs. Mass storage devices such as...

...share the same application ED ("AID"). As used herein, an application chain is the logical **grouping** of a set of applications and processes that communicate with each other and share I...

17/5,K/20 (Item 16 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
(c) 2006 WIPO/Thomson. All rts. reserv.

00522063 \*\*Image available\*\*  
DISTRIBUTED PROCESSING OVER A NETWORK  
TRAITEMENT REPARTI DANS UN RESEAU

Patent Applicant/Assignee:

HEWLETT-PACKARD COMPANY,  
WOLFF James J,

Inventor(s):

WOLFF James J,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9953415 A1 19991021

Application: WO 99US8169 19990414 (PCT/WO US9908169)

Priority Application: US 9860924 19980415; US 9860869 19980415; US  
9860857 19980415; US 9860864 19980415

Designated States:

(Protection type is "patent" unless otherwise stated - for applications  
prior to 2004)

AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE  
GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK  
MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US US US  
US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ  
TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI  
CM GA GN GW ML MR NE SN TD TG

Main International Patent Class (v7): G06F-017/00

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 49788

English Abstract

Methods and apparatus for operating a network with clustered resources are disclosed: including clustered file management for network resources, client load balancing, resource balancing and distributed Input and Output (I/O). Client load rebalancing refers to the ability of a client in accordance with the current invention to remap a path through a plurality of nodes to a resource. Client load rebalancing allows the client (100A) to optimize throughout between themselves and the resources accessed by the nodes. A network which implements this embodiment of the invention can dynamically rebalance itself to optimize throughout by migrating client I/O requests from overutilized pathway to underutilized pathways. Resources can include but are not limited to computers, memory devices, imaging devices, printers and data sets. A data set can include a database or a file system for example. Resource rebalancing includes remapping of pathways between nodes, servers, and resources; volume/file systems. Resource rebalancing allows the network to reconfigure itself as components come on-line/off-line, as components fail and as components fail back. Distributed I/O refers to the methods on a network which provide concurrent input/output throughout a plurality of nodes to resources. Generally by allowing one server to handle the administrative management of a resource while allowing all servers including the administrative server to handle the actual passing of all data associated with the I/O request allows for increased bandwidth between clients (100A) and the resource.

French Abstract

L'invention porte sur des procedes et appareils d'exploitation d'un reseau a ressources reparties en grappes comprenant: la gestion des

ressources du reseau en fichiers en grappes, le reequilibrage de la charge client, le reequilibrage des ressources, et la repartition des E/S. Le reequilibrage client, qui se refere a la capacite d'un client, dans le cadre de l'invention, a redefinir un cheminement vers une ressource en passant par differents noeuds, permet a un client (100A) d'optimiser le cheminement le reliant aux ressources via les noeuds. Un reseau recourant a l'invention s'auto-reequilibre dynamiquement et optimise les cheminements en transferant les demandes d'E/S des clients des trajectoires les plus utilisees vers les trajectoires les moins utilisees. Les ressources comprennent non exclusivement des ordinateurs, des memoires, des dispositifs d'imagerie, des imprimantes ou des ensembles de donnees (banque de donnees ou systeme de fichiers etc.). Le reequilibrage des ressources, qui consiste a redefinir les cheminements entre noeuds, serveurs et ressources; des systemes volumes/fichiers, assure l'auto-reconfiguration du systeme en tenant compte des composants, utilises ou non, en panne ou retombant en panne. La repartition des E/S se refere a des procedes s'appliquant a un reseau presentant des entrees et sorties concurrentes reliees aux differents noeuds conduisant aux ressources, generalement en attribuant a un serveur la gestion administrative d'une ressource, tout en permettant a tous les serveurs dont l'administratif de gerer le passage actuel des donnees associees aux demandes d'E/S, et d'attribuer des largeurs de bande accrues aux liaisons entre clients (100A) et ressources.

Fulltext Availability:  
Detailed Description

#### Detailed Description

... imaging devices, printers and data sets. A data set can include a database or a **file** system for example. Nodes can include but are not limited to computers, gateways, bridges and...alternate nodes in response to an overload condition. In the embodiment shown in FIG. 1A, **clients** communicate across one **network** with **nodes** while the nodes communicate across another network with resources. As will be obvious to those...

...in the art the current invention can be applied with equal advantage on a single **network** on which **clients**, **nodes**, and resources coexist. Additionally, what are shown as separate **clients** and nodes can alternately be implemented as a single physical unit. These and other embodiments of the **client** load rebalancing portion of the invention will be discussed in greater detail in connection with...

...servers, to resources, e.g.

file systems 122 via memory resource I 1 8 is **provided**. **Concurrent access** to a resource **allows** a higher volume of I/O traffic to the resource, while maintaining file I 0...

...on memory  
resource I 1 8; nodes, e.g. servers 10413- I 06B and normal **clients** I 00A. Memory resource I 1 8 includes a configuration database 120A-C and a ...

...include complementary processes 104PB- I 06PB for handling concurrent I/O requests from either of **clients** I 00A for a file system resource on memory resource I 1 8. The memory...

...network 1 12 to both  
servers 10413 Each of servers 10413-10613 communicate with normal **clients** I 00A via network 108.

In operation one of the servers, i.e. ...is operational.

Processes 104PC cause server 104C to accept and process requests for any of **file** systems 122A 1 -3, 122B 1 -3 on respectively memory resource 1 1 8A-B...

Set	Items	Description
S1	14314506	FEDERAT? OR CONSOLIDAT? OR AGGREGAT? OR COMBIN? OR JOIN??? OR GROUP??? OR ASSOCIAT?
S2	6114888	MIGRAT??? OR MAP OR MAPS OR MAPP??? ? OR MOVING? OR TRANSF- ER? OR TRANSLAT? OR MOVE??? ?
S3	472687	(LOCAL OR INDEPEND? OR STAND()ALONE OR INDIVIDUAL? OR SING- L? OR SEPARATE? OR SINGULAR? OR UNIQUE? OR LONE? OR ONE) (3N) (- FILESYSTEM? ? FILE()SYSTEM? ? OR COMPUT? OR DATABASE? OR PC OR NODE? ? OR TERMINAL? OR WORKSTATION? OR WORK()STATION?) OR C- LIENT?
S4	364601	(NETWORK? OR INTERNET? OR INTRANET? OR DISTRIBUT? OR ETHER- NET? OR EXTRANET? OR SUBNET? OR LAN? ? OR WAN? ? OR WLAN) (3W) - (FILESYSTEM? ? OR FILE()SYSTEM? ? OR COMPUT? OR DATABASE? OR - PC OR NODE? ? OR TERMINAL? OR WORKSTATION? OR WORK()STATION?)
S5	705091	(ENABL? OR ALLOW??? OR PERMIT? OR FACILITAT? OR AUTHORI? OR PROVID? OR GIVE? ? OR GIVING OR GRANT?) (3N) (ACCESS? OR ENTRY OR ENTRIE? ? OR USE? ? OR USING OR UTILI? OR ENTREE? OR EDIT?- ?? OR READWRITE? OR READ()WRITE)
S6	19940	S5(5N) (WHILE OR STILL OR DURING OR DESPITE OR CONCURRENT? - OR LIVE OR LIVETIME? ? OR RUN? ? OR RUNNING OR WHILE()RUNNING OR REALTIME OR REAL()TIME?)
S7	11	S1 AND S2 AND S3 AND S4 AND S6
S8	580	FILE? ? (3N) (MIGRAT? OR FEDERAT?)
S9	40	S8 AND S3 AND S4
S10	1	S9 AND S6
S11	39	S9 NOT S10
S12	33	S11 NOT (PY>2003 OR PY=2004:2006)
S13	27	RD (unique items)
File	2:INSPEC 1898-2006/Dec W2	(c) 2006 Institution of Electrical Engineers
File	6:NTIS 1964-2006/Dec W1	(c) 2006 NTIS, Intl Cpyrght All Rights Res
File	8:EI Compendex(R) 1970-2006/Dec W2	(c) 2006 Elsevier Eng. Info. Inc.
File	34:SciSearch(R) Cited Ref Sci 1990-2006/Dec W2	(c) 2006 The Thomson Corp
File	35:Dissertation Abs Online 1861-2006/Nov	(c) 2006 ProQuest Info&Learning
File	56:Computer and Information Systems Abstracts 1966-2006/Dec	(c) 2006 CSA.
File	60:ANTE: Abstracts in New Tech & Engineer 1966-2006/Dec	(c) 2006 CSA.
File	62:SPIN(R) 1975-2006/Dec W1	(c) 2006 American Institute of Physics
File	65:Inside Conferences 1993-2006/Dec 15	(c) 2006 BLDSC all rts. reserv.
File	94:JICST-EPlus 1985-2006/Sep W1	(c)2006 Japan Science and Tech Corp(JST)
File	95:TEME-Technology & Management 1989-2006/Dec W2	(c) 2006 FIZ TECHNIK
File	99:Wilson Appl. Sci & Tech Abs 1983-2006/Nov	(c) 2006 The HW Wilson Co.
File	111:TGG Natl.Newspaper Index(SM) 1979-2006/Nov 30	(c) 2006 The Gale Group
File	144:Pascal 1973-2006/Nov W4	(c) 2006 INIST/CNRS
File	239:Mathsci 1940-2006/Jan	(c) 2006 American Mathematical Society
File	256:TecInfoSource 82-2006/Jul	(c) 2006 Info.Sources Inc
File	434:SciSearch(R) Cited Ref Sci 1974-1989/Dec	

(c) 2006 The Thomson Corp  
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13  
(c) 2002 The Gale Group

10/7/1 (Item 1 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

03076661 INSPEC Abstract Number: C83027933

Title: STORK: an experimental migrating file system for computer networks

Author(s): Paris, J.-F.; Tichy, W.F.

Author Affiliation: Univ. of California, San Diego, La Jolla, CA, USA

Conference Title: Proceedings of IEEE INFOCOM 83 p.168-75

Publisher: IEEE, New York, NY, USA

Publication Date: 1983 Country of Publication: USA xvii+618 pp.

ISBN: 0 8186 0006 3

U.S. Copyright Clearance Center Code: CH1881-2/83/0000/0168\$01.00

Conference Sponsor: IEEE

Conference Date: 18-21 April 1983 Conference Location: San Diego, CA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: STORK is an experimental file system designed for local and long-haul networks. It ensures that each user has a single view of his files, independent of the network node where he works, and independent of the location of the files. STORK files have no fixed location; instead they migrate to the network node where they are needed. File consistency is ensured by permitting only one current copy of each file to exist in the net at any given time. A lock mechanism is provided for controlling concurrent access. The performance of the system depends on the locality of the references to a given file and not on the host where the file was created. An analytical model is presented which compares file migration with remote file access. STORK has been implemented on a network of UNIX systems running on VAXes and PDP-11s, using primitives of the Berkeley Network software. It can also be quickly installed on any network of UNIX systems allowing remote execution of commands. (17 Refs)

Subfile: C

13/7/1 (Item 1 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

08755436 INSPEC Abstract Number: C2003-11-6150N-101

**Title: Object and process migration in .NET**

Author(s): Troger, P.; Polze, A.

Author Affiliation: Hasso-Plattner-Inst., Univ. of Potsdam, Germany

Conference Title: Eighth IEEE International Workshop on Object-Oriented Real-Time Dependable Systems p.139-46

Publisher: IEEE, Los Alamitos, CA, USA

Publication Date: 2003 Country of Publication: USA x+320 pp.

ISBN: 0 7695 1929 6 Material Identity Number: XX-2003-00781

U.S. Copyright Clearance Center Code: 1530-1443/03/\$17.00

Conference Title: WORDS 2003: 8th International Workshop on Object-oriented Real-Time Dependable Systems

Conference Sponsor: IEEE Tech. Committee on Distributed Process.; IFIP WG 10.4 on Dependable Comput. OMG

Conference Date: 15-17 Jan. 2003 Conference Location: Guadalajara, Mexico

Language: English Document Type: Conference Paper (PA)

Treatment: Applications (A); Practical (P)

**Abstract:** Most of today's **distributed computing** systems in the field do not support the migration of execution entities among computing nodes during runtime. The relatively static association between units of processing and computing nodes makes it difficult to implement fault-tolerant behavior or load-balancing schemes. The concept of code migration may provide a solution to the problems mentioned above. It can be defined as the movement of process, object or component instances from **one computing node** to another during system runtime in a distributed environment. Within our paper we describe the integration of a migration facility with the help of aspect-oriented programming (AOP) into the .NET framework. AOP is interesting as it addresses nonfunctional system properties on the middleware level, without the need to manipulate lower system layers like the operating system itself. We have implemented two proof-of-concept applications, namely a migrating Web server as well as a **migrating file** version checker application. The paper contains an experimental evaluation of the performance impact of object migration in context of those two applications. (14 Refs)

Subfile: C

Copyright 2003, IEE



13/7/2 (Item 2 from file: 2)  
DIALOG(R) File 2:INSPEC  
(c) 2006 Institution of Electrical Engineers. All rts. reserv.

08653004 INSPEC Abstract Number: C2003-07-6120-015

**Title: Concept and evaluation of X-NAS: a highly scalable NAS system**

Author(s): Yasuda, Y.; Kawarnoto, S.; Ebata, A.; Okitsu, J.; Higuchi, T.

Conference Title: Proceedings 20th IEEE/11th NASA Goddard Conference on Mass Storage Systems and Technologies p.219-27

Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA

Publication Date: 2003 Country of Publication: USA xi+300 pp.

ISBN: 0 7695 1914 8 Material Identity Number: XX-2003-01532

U.S. Copyright Clearance Center Code: 0-7695-1914-8/03/\$17.00

Conference Title: Proceedings 20th IEEE/11th NASA Goddard Conference on Mass Storage Systems and Technologies

Conference Sponsor: IEEE Mass Storage Syst. Tech. Committee; NASA Goddard Space Flight Center

Conference Date: 7-10 April 2003 Conference Location: San Diego, CA, USA

Medium: Also available on CD-ROM in PDF format

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: X-NAS (expandable network attached storage), a highly scalable, **distributed file system** designed for entry-level NAS, has been developed. It virtualizes multiple NAS systems into a single-file-system view for different kinds of **clients**. The core of X-NAS is a multi-protocol virtualized file system (MVFS), and its key features - a smart-code wrapper daemon, file-group mapping, and a file-handle cache - improve X-NAS scalability. X-NAS has other key features for improving the manageability on many NAS systems; namely, on-line reconfiguration, autonomous rebalancing, and automatic **migration**, in which **files** are **migrated** automatically and dynamically independently of file-sharing services for **clients**. To validate the X-NAS concept, an X-NAS prototype was designed and tested according to the NFSv2 implementation. These tests indicate that X-NAS attains a quicker response time and higher throughput than a conventional single NAS, so its cost-performance scalability is also higher. (10 Refs)

Subfile: C

Copyright 2003, IEE

13/7/3 (Item 3 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

08070622 INSPEC Abstract Number: C2001-12-6150N-008

**Title: BAG distributed real-time operating system and task migration**

Author(s): Tefvik Akgun, B.

Author Affiliation: Dept. of Comput. Eng., Istanbul Tech. Univ., Turkey

Journal: Turkish Journal Electrical Engineering and Computer Sciences,  
Elektrik vol.9, no.2 p.123-36

Publisher: Sci. & Tech. Res. Council Turkey,

Publication Date: 2001 Country of Publication: Turkey

CODEN: ELEKF8 ISSN: 1300-0632

SICI: 1300-0632(2001)9:2L:123:DRT0;1-8

Material Identity Number: E418-2001-003

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: BAG is a distributed operating system designed for real-time applications which is run on a distributed real-time system. The heterogeneously distributed BAG system consists of nodes which have a VME-bus chassis, different types of processor modules, and an interconnection network. The operating system has three main parts having distributed properties: task migration, load balancing and a **distributed file system**. Heterogeneous task migration is based on the extended finite state machine (EFSM) programming model. The EFMS model has also eased the implementation of the migration mechanism. The load balancing algorithm is centralized in **one node**, but the overall system will be a multi-centered structure. Another objective of our work is to achieve a fast load balancing mechanism suitable for real-time systems. A file system supporting the task migration mechanism is also designed and developed. Users and processes all have the same view of this file system as a global tree. The file system uses a **client /server** approach and meets **distributed file system** requirements with real-time concepts such as priorities and time-out values. (32 Refs)

Subfile: C

Copyright 2001, IEE

13/7/4 (Item 4 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

07970430 INSPEC Abstract Number: C2001-08-6150N-077

**Title: Design and implementation of a distributed NFS server on cluster of workstations**

Author(s): Wei Liu; Weimin Zheng; Meiming Shen; Xinming Ou; Min Wu

Author Affiliation: Dept. of Comput. Sci., Tsinghua Univ., Beijing, China

Conference Title: Parallel and Distributed Computing and Systems Part  
vol.1 p.7-12 vol.1

Editor(s): Guizani, M.; Shen, X.

Publisher: IASTED/ACTA Press, Anaheim, CA, USA

Publication Date: 2000 Country of Publication: USA 2 vol. vi+826 pp.

ISBN: 0 88986 304 0 Material Identity Number: XX-2000-02850

Conference Title: Proceedings of 2000 Conference on Parallel and Distributed Computing and Systems

Conference Sponsor: IASTED

Conference Date: 6-9 Nov. 2000 Conference Location: Las Vegas, NV, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

**Abstract:** The paper presents the design and implementation of a distributed NFS server which consists of multiple computers. The distributed NFS server provides the identical NFS file service as the traditional NFS server. No modification of **client** software is needed to use the distributed NFS service. The purpose of the distributed NFS server is to replace large collections of NFS servers. In addition, the distributed server affords many functions which are not available in traditional NFS to users: transparently **migrating** and replicating **files** across multiple servers, effective metadata cache and distributed metadata and real data storage. We evaluate the performance of the distributed NFS server. We observe that it has comparable performance with NFS which is designed in the kernel level in the case of one **client** and it is more scalable than traditional NFS services. (11 Refs)

Subfile: C

Copyright 2001, IEE

13/7/5 (Item 5 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

06162079 INSPEC Abstract Number: C9602-6160B-026

**Title: Applying database technology in the ADSM mass storage system**

Author(s): Cabrera, L.-F.; Rees, R.; Hineman, W.

Author Affiliation: IBM Almaden Res. Center, San Jose, CA, USA

Conference Title: VLDB '95. Proceedings of the 21st International Conference on Very Large Data Bases p.597-605

Editor(s): Dayal, U.; Gray, P.M.D.; Nishio, S.

Publisher: Morgan Kaufmann, San Francisco, CA, USA

Publication Date: 1995 Country of Publication: USA xvi+728 pp.

Material Identity Number: XX95-02598

Conference Title: Proceedings of VLDB '95. 21st International Conference on Very Large Data Bases

Conference Date: 11-15 Sept. 1995 Conference Location: Zurich, Switzerland

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Our success in deploying the illusion of infinite storage to applications rests in the use of database technology. This paper presents the support for transactions in the ADSTAR Distributed Storage Manager (ADSM) system. For a user, ADSM offers a backup and archive service in a heterogeneous client-server environment. It also operates as a file migration repository in some Unix environments. As a storage manager, the ADSM server is a mass storage system (MSS) that administers storage hierarchies of arbitrary depth in which all activities are done on behalf of transactions. Its systems goals include to operate in many computing platforms, to provide highly-available metadata, to administer effectively a large amount of entities, to support continuous and unattended operation, and to support a high degree of concurrent requests. (24 Refs)

Subfile: C

Copyright 1996, IEE

13/7/6 (Item 6 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

05183608 INSPEC Abstract Number: C9208-6120-005

**Title: Design for a transparent, distributed file system**

Author(s): Mecozzi, D.; Minton, J.

Author Affiliation: Lawrence Livermore Nat. Lab., CA, USA

Conference Title: Digest of Papers. Eleventh IEEE Symposium on Mass Storage Systems (Cat. No.91CH3039-5) p.77-84

Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA

Publication Date: 1991 Country of Publication: USA xi+161 pp.

ISBN: 0 8186 2155 9

U.S. Copyright Clearance Center Code: CH3039-5/91/0000-0077\$01.00

Conference Sponsor: IEEE

Conference Date: 7-10 Oct. 1991 Conference Location: Monterey, CA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: At the Lawrence Livermore National Laboratory (LLNL), caching and migration protocols have been designed to integrate distributed UniTree File Management System servers running on separate machines to create a single file system. These protocols allow **files** to **migrate** between levels of a storage hierarchy to create a unified distributed storage system. The design provides **clients** with a single method for accessing files, regardless of file location. File caching provides **clients** with optimal performance, while **file migration** enables **file** servers to optimize their space utilization. The key features of the system include use of unique, location-independent file caching, and a locking mechanism to synchronize access to the system's files and manage conflicts related to multiple copies of the files. A shift in LLNL policy to acquire vendor-supported software prevented the completion of the implementation of this unified storage system. However, the design solves many problems that can occur when providing a transparent **distributed file system**. (15 Refs)

Subfile: C

13/7/7 (Item 7 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2006 Institution of Electrical Engineers. All rts. reserv.

03854289 INSPEC Abstract Number: C87024496

Title: Land /structure/occupancy database design: handling at increasingly complex urban reality

Author(s): Eichelberger, P.

Author Affiliation: HDR Infrastructure, Inc., Omaha, NE, USA

Conference Title: Conference Theme: What's the Difference. Papers from the Annual Conference of the Urban and Regional Information Systems Association p.1-12 vol.2

Editor(s): Niemann, B.J., Jr.

Publisher: Urban & Regional Inf. Syst. Assoc, Washington, DC, USA

Publication Date: 1986 Country of Publication: USA 4 vol. (viii+256+vi+204+vi+120+viii+206) pp.

Conference Date: 10-14 Aug. 1986 Conference Location: Denver, CO, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: As the need for more sophisticated local government systems grow, simpler concepts are needed to help deliver these systems. A subject database approach independent of the line agency organizational structure, provides for more dynamic, longer lived data structures, while supporting higher level governmental functions. The Land /Structure/Occupancy subject database greatly reduces data redundancy and promotes data sharing. It is a longer range concept that can quickly bring benefits by using generic system identification, file /database migration planning and database as a 'family of products' implementation strategy.

(5 Refs)

Subfile: C

13/7/8 (Item 8 from file: 2)  
DIALOG(R) File 2:INSPEC  
(c) 2006 Institution of Electrical Engineers. All rts. reserv.

03076659 INSPEC Abstract Number: C83027931

**Title: Cooperating file systems for a local network**

Author(s): Robertson, G.G.

Author Affiliation: Bolt Beranek & Newman, Cambridge, MA, USA

Conference Title: Digest of Papers. Hardware and Software Issues for Mass Storage Systems. Fifth IEEE Symposium on Mass Storage Systems p.33-6

Editor(s): Friedman, K.

Publisher: IEEE, New York, NY, USA

Publication Date: 1982 Country of Publication: USA vi+137 pp.

U.S. Copyright Clearance Center Code: CH1787-1/82/0000/0033\$00.75

Conference Sponsor: IEEE

Conference Date: 26-28 Oct. 1982 Conference Location: Boulder, CO, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: The file systems described form a transparent, cached memory hierarchy for a variety of **computers** connected by a **local network**. The spectrum of **computers** using this network ranges from mainframes supporting time-sharing to personal computers. The services provided by the file systems include the storage, **migration** and archiving of **files**, the naming and sharing of files and directories and the authentication of users. The system described is being implemented in the Department of Computer Science at Carnegie-Mellon University. However, the design is intended to be applicable to any installation whose computers are linked by a local network and which possesses a large capacity archival storage system. (16 Refs)

Subfile: C